# NAVAL HEALTH RESEARCH CENTER

# *THE INFLUENCE OF SURVEY METHODOLOGY IN ESTIMATING PREVALENCE RATES OF CHILDHOOD SEXUAL ABUSE AMONG NAVY RECRUITS*

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# THE INFLUENCE OF SURVEY METHODOLOGY IN ESTIMATING RATES OF CHILDHOOD VICTIMIZATION AMONG NAVY RECRUITS

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**Abstract**

Surveys that directly ask participants whether they have been abused are likely to derive different results than studies that ask about specific childhood sexual experiences (CSEs) or about experiences with specific types of parental physical aggression, which participants may or may not personally define as abusive. We compared results from the SHIP survey with the results of the confidential Survey of Recruit Behavior (SRB) conducted by the Naval Health Research Center. Rates of childhood abuse varied markedly. SHIP rates were lowest, with 5% of the participants identified as victims of abuse. Using SRB operational definitions resulted in the highest rate of 60%, while SRB self-definition resulted in a rate of 31%. Recruits were more likely to report an abuse history in the SHIP if they had been either physically or sexually abused. Data from all three sources independently accounted for variability in participants' symptoms of depression, anxiety, and sexual difficulties.

**Summary**

Despite numerous social service programs and public prevention policies, childhood abuse is a common experience among children growing up in the United States. Reviews suggest that 20-40% of women and about 10% of men experienced sexual abuse during childhood and 7-28% experienced acts of very severe physical violence during childhood (Browne & Hamilton, 1998; Langhinrichsen-Rohling, Monson, Meyer, Caster, & Sanders, 1998; Merrill et al., 1997; Pizarro & Billick, 1999; Trickett & Putnam, 1998). Merrill et al. (1997) estimated that childhood victimization rates among Navy recruits are in the high range of estimates for the general U.S. population. They found that 25% to 28% of Navy recruits had experienced childhood physical abuse and 27% to 31%

of women and 11% to 13% of men had experienced sexual abuse during childhood.

Numerous correlates of childhood abuse have been documented later in life, such as anxiety, depression, suicidal behavior, hypersexuality, low self-esteem, poor interpersonal relationships, chronic medical or somatic complaints, and high revictimization rates (Downs & Miller, 1998; Fromuth, 1986; Hamid Maker, Kemmelmeier, & Peterson, 1998; Langhinrichsen-Rohling et al., 1998; Merrill, et al., 1997; Milner, Robertson, & Rogers, 1990; Rosen & Martin, 1998; Trickett & Putnam, 1998; Wood, 1996). The long-term effects of childhood abuse among military recruits have a potential impact on military readiness. For example, several studies have noted a correlation between premilitary victimization histories and the likelihood that enlisted recruits will separate from the service before they successfully complete their enlistment contracts (Carbone, Cigrang, Todd, & Fiedler, 1999; Cigrang, Carbone, Todd, & Fiedler, 1998; Crawford & Fiedler, 1992; Smikle, Fiedler, Sorem, Spencer, & Satin, 1996; Talcott, Haddock, Klesges, Lando, & Fiedler, 1999). Adult victims of abuse also tend to use healthcare services more than adults who have not experienced abuse, and they are more likely to engage in antisocial behavior (Haapasalo & Pokela, 1999; Wolfe et al., 1998; Wood, 1996). The services incur multiple costs when military personnel are not able to maintain their health and successfully fulfill their service obligations (Cohen & Miller, 1998; Rosen & Martin, 1996).

Despite many reports of negative long-term outcomes, the many variations in the way abuse is defined and measured influence the comparability and potential validity of research on childhood abuse (Briere, 1992; Carlin et al., 1994). For example, some studies directly ask participants whether they ever were abused. This is the case, for instance, in entrance surveys for military basic training (Crawford & Fiedler, 1992; Mittelman, Plunkett, & Bayer, 1998). For example, on the first day of Navy basic training recruits fill out a comprehensive health survey called the Sailors' Health Inventory Program (SHIP). The SHIP facilitates participants' enrollment into the military healthcare system and identifies new enlisted personnel who might need specialized healthcare or health education. The SHIP survey includes only one item about victimization histories. This question asks recruits "Have you had or do you have any of the following?" and includes as one of the listed experiences "A history of physical, emotional, or sexual abuse." This survey depends on participants' self-identification as survivors of abuse. Such surveys are likely to find different results from those that ask participants about specific childhood sexual experiences (CSEs) or about experiences with specific types of parental physical aggression.

The purpose of this study was to explore how recruits' responses regarding their abuse histories might be affected by survey methodology. We compared results from the SHIP survey with the results of a confidential survey, the Survey of Recruits' Behavior (SRB) conducted by the Naval Health Research Center, San Diego, California. SHIP survey abuse rates were compared with rates calculated from three SRB questions asking participants whether they were victims of childhood sexual, physical, or verbal abuse. Self-defined victimization rates from both surveys were further compared with SRB data regarding recruits' CSEs and histories of parental verbal and physical aggression which met a priori operational definitions for childhood sexual, physical, and emotional abuse. Finally, this study evaluated how well the SHIP and SRB data identified recruits with childhood abuse histories that might need mental health services.

## METHOD

*Participants and Procedure*

The participants were 5,498 Navy recruits in their first week of basic training (2,573 women and 2,925 men) The majority (see Table 1) were Caucasian (61%), had

high school diplomas (85%), and were ages 18 to 20 years (71%). Most were also single with no children (85%). The SHIP survey and the SRB were both administered to recruits during their first week of basic training at the Recruit Training Command (RTC), Great Lakes, IL. The SHIP survey is a comprehensive assessment of recruits' health history and current health status, which facilitates registration into the Navy healthcare system at RTC and is administered to all recruits. Participation in the SRB was solicited from June 1996 to June 1997. All recruits in gender-integrated units were invited to participate. Approximately 50% of participants were asked for their social security numbers so that information from their military records could be matched to their survey responses, the remaining half were not requested to provide identifying information and so were not used in the present analyses. Participants were informed that no personally identifying information from the SRB would be available to military personnel. Nongovernment civilian proctors administered all of the surveys in a group setting, with alternate groups receiving either the identified or nonidentified version of the survey. Only researchers had access to information that might link participants' responses to their identifying information. Participants were further told they did not have to answer any portion of the survey if they were uncomfortable doing so.

*Instruments Sailors' Health Inventory Program survey*. Self-defined childhood abuse was assessed in the SHIP survey by a single item. Participants were asked only one question concerning abuse: "Have you had or do you have any of the following?…History of physical, emotional or sexual abuse." Response options were "yes" or "no."

*Demographic and Family History Questionnaire (DFHQ).* The SRB DFHQ asked about participants' age, race, marital status, children, and educational level. It also asked about participants' family backgrounds, including parental income and marital status and childhood family environment. In this study, self-defined childhood physical and sexual abuse data were obtained from two items in the DFHQ. These were "Before the age of 18, were you ever sexually abused?" and "Before the age of 18, were you ever physically abused?"

*Parental Support Scale (PSS).* The PSS (Fromuth, 1986), which was included in the SRB, used two items to identify participants who believed they had been emotionally abused. These were "My mother was verbally abusive to me" and "My father was verbally abusive to me." Responses to the PSS were on a 5-point scale from 1 (agree) to 5 (disagree). For this study we categorized participants who chose 1 (agree) as self-defined victims of emotional abuse. Those who chose 2 through 5 were categorized as not abused. In comparison with responses to the SHIP survey abuse item, this is a conservative criterion. Only 1 out of 5 response options qualified participants for the abused classification. Furthermore, the phrase "verbal abuse" probably has narrower connotations than the term "emotional abuse" used in the SHIP survey. There are most likely additional participants who would have defined themselves as "emotionally abused" on the recruit survey had a question with this phrasing been included.

*Childhood Sexual Experiences Checklist. (CSEC).* The CSEC was developed for the SRB and asked recruits if they had experienced sexual contact (kissing, touching, oral, anal, or vaginal intercourse) prior to age 18 years with anyone at least 5 years older than themselves. The CSEC included a list of persons with whom participants might have had CSEs (e.g., parent, stepparent, sibling, grandparent, teacher, employer). For each person with whom participants had a CSE, the questionnaire asked about their age when the event first happened, the other person's estimated age when it first happened, the number of times the experience occurred, and whether that person used force or threats during the incident. Based on this information, the analyses for this report

included (a) participants' age at the time of their first CSE, (b) the number of different relationships in which participants had CSEs, (c) whether any experience involved penetration, (d) whether participants had CSEs with a family member, (e) the total number of CSEs participants reported, and (f) whether threats or force were ever used to gain their compliance.

*Conflict Tactics Scale, Parental-Child form (CTS-PC).* The parent-child version of Straus' Conflict Tactics Scale form R (Straus & Gelles, 1990) was included in the SRB to assess whether participants had experienced parental aggression. The CTS-PC includes 19 items representing conflict resolution strategies parents might use with children. Participants indicated which of these 19 strategies their parents used with them before they were 18 years old. The measure can be broken down into 5 subscales identifying participants who experienced "Reasoning," "Verbal Aggression," "Minor Physical Aggression," "Severe Physical Aggression," and "Very Severe Physical Aggression." The CTS-PC in the SRB eliminated one parental conflict resolution strategy (cried) from form R because it is not included in any of these subscales. However, the measure added a strategy (choked) from the intimate partner version of the CTS form R to the very severe subscale. Only the verbal and very severe aggression subscales were used in the analyses for this report.

*Trauma Symptom Inventory (TSI).* We used the clinical subscales of the TSI (Briere, 1995) from the SRB as a measure of participants' mental and emotional health. The TSI is a 100-item measure designed to evaluate a variety of aspects of psychological functioning, and in particular, symptoms associated with posttraumatic stress disorder (PTSD) and acute stress disorder. The contains 10 clinical subscales: (1) anxious arousal, (2) depression, (3) anger/irritability, (4) intrusive experiences, (5) defensive avoidance, (6) dissociation, (7) sexual concerns, (8) dysfunctional sexual behavior, (9) impaired self-reference, and (10) tension reduction behavior. The TSI clinical scales have good internal consistency with alpha coefficients ranging from .74 to .91 (Briere, 1995).

*Construction of Abuse Variables*

For the purposes of analysis and presentation, three abuse variables were calculated and will be referred to by the following terms:

SHIP self-definition: Respondents were considered to have indicated self-defined abuse if they answered "yes" to the abuse item on the SHIP described above.

SRB self-definition: This variable is a combination of four items from the SRB. Respondents were considered to have indicated self-defined abuse if they answered "yes" to either the physical or sexual abuse item in the DFHQ (see above), or if they answered "agree" to either of the verbal abuse items on the PSS (see above.) In some analyses, these items were used separately and will be referred to as "self-defined physical abuse" and "self-defined sexual abuse."

SRB operational definition: This variable combines responses from the CTS-PC and the CSEC. Respondents were considered to be abused under our operational definition if they reported on the CSEC that they had a contact sexual experience before age 18 with a person at least five years older, or if they indicated at least one experience classified as severe or very severe abuse, or verbal abuse on the CTS-PC. Operationally defined abuse differed from self-definitions in that the scale items contributing to the operational definition of abuse referred to specific incidents or behaviors, and did not specifically mention the term "abuse." For some analyses only single types of abuse were considered. "Operationally defined sexual abuse" used only information from the CSEC as described above. "Operationally-defined physical" abuse was defined as an incident from the severe or very severe abuse section of the CTS-PC. Finally, "operationally defined verbal abuse" was defined as an incident from the verbal abuse section of the CTS-PC.

## RESULTS

A total of 2,515 women and 2,889 men completed both the identified version of the SRB and the SHIP survey. To assess agreement between respondents' self-reports of abuse the Kappa statistic was used (Cohen, 1960.) Lower magnitudes of Kappa indicate that agreement between responses on the different assessment of abuse does not exceed chance levels. In the SHIP survey, 5% ($n$ = 284) of the participants acknowledged having experienced emotional, physical, or sexual abuse prior to basic training (see Table 2). In contrast, SRB operational definitions indicated that 60% ($n$ = 2,883) of the participants had been abused emotionally, verbally, or sexually prior to the age of 18 years. The percentage of operationally defined abuse was different from both SRB self-definition, $\text{Kappa}_{[N = 4554]} = .35$, $p < .001$, and SHIP self-definition, $\text{Kappa}_{[N = 4777]} = .06$, $p < .001$.

Of the participants who had experienced self-defined abuse on the SRB, 17% acknowledged a history of abuse on the SHIP survey. Conversely, 91% of all recruits who reported abuse on the SHIP survey identified themselves as abused on the SRB. SRB operational definitions identified the same percentage (91%) of those who self-defined themselves as abused in the SHIP survey and 89% of those who reported self-defined abuse in the SRB. By contrast, among those who were operationally defined as abused, 9% reported abuse on the SHIP survey, while on the SRB 48% self-defined their childhood experiences as abusive.

Three percent of the participants who reported a history of abuse on the SHIP survey were neither self-defined nor operationally defined as victims of childhood abuse in the SRB. Ten percent of the participants who self-reported abuse in the SRB were neither operationally defined as victims nor did they self-report abuse on the SHIP survey. Finally, of those who were operationally defined abuse victims, 51% did not acknowledge their childhood experiences as abusive.

### *Relationships Between Specific Abuse Experiences and SHIP Survey Responses*

It was not possible to identify what types of abuse participants had experienced on the basis of the SHIP survey. However, we explored whether the SRB data might provide information regarding the types of experiences that might most influence participants to report a history of abuse in the SHIP survey. Table 3 shows the percentages of recruits who acknowledged on the SHIP survey that they had been abused among participants who also reported verbal, physical, or sexual abuse in the SRB. Percentages willing to disclose abuse ranged from a low of 3% among men operationally defined as sexually or verbally abused to a high of 29% among women who were self-defined victims of sexual abuse. There were consistently higher percentages of women than men who reported a history of abuse on the SHIP survey.

We evaluated the relationships between the SHIP abuse history data and all of the abuse variables assessed in the SRB using stepwise logistic regression. We computed equations separately for men and women, with the SHIP abuse item as the dependent variable and the SRB abuse data for self-defined and operationally defined verbal, physical, and emotional abuse as independent variables. The odds ratios for each variable that significantly entered these equations are shown in Table 4.

In this multivariate analysis, only SRB self-defined abuse was uniquely related to the likelihood that participants reported a history of abuse in the SHIP. Furthermore, among men self-defined verbal abuse was not related to reports of abuse on the SHIP after accounting for the relationships of physical and sexual abuse. The contribution of verbal abuse did not reach significance for men.

Reporting sexual abuse in the SRB was most strongly related to an increased likelihood that women had acknowledged abuse in the SHIP survey. Comparing women who reported they were versus were not sexually abused, rates on the SHIP

survey were 29% and 3%, respectively. The odds ratios in Table 4 for women show that this effect was significantly greater than the effects for verbal or physical abuse. Significant differences were also found between the effects of physical and sexual abuse for men. However, in this case the effect of physical abuse was significantly greater (10% vs. 0.7%) than that for sexual abuse (13% vs. 1.4%). Odds ratios in Table 4 further indicate that sexual abuse was less important for men than it was for women. Conversely, physical abuse was more important for men.

*Survey Methodology and the Relationship of Abuse to Mental Health Outcomes*

A further purpose of the present study was to evaluate the relationship of survey methodology to the likelihood of experiencing symptoms of PTSD as measured by the TSI clinical subscales. However, an initial analysis revealed that including the SHIP abuse variable in the equation would result in some cells that were too small to be interpretable. Therefore, the following analyses include only a comparison of the self-defined and operationally defined abuse variables from the SRB.

A repeated measures multivariate analysis of variance was performed using the two abuse measures from the SRB and gender as independent variables and the 10 subscales of the TSI as dependent variables. All three main effects were statistically significant, (sex, $F_{[1,\ 4459]} = 8.60$; SRB self-definition, $F_{[1,\ 4459]} = 58.96$; SRB operational definition, $F_{[1,\ 4459]} = 154.11$).

The main effect for gender revealed that women had higher scores on the TSI for the subscales of sexual concerns and dysfunctional sexual behavior. Men had higher scores on depression, intrusive experiences, and tension reduction behavior. Men and women did not differ significantly on the remaining subscales of the TSI (see Table 5).

The main effects for abuse variables showed that, for both the self-defined and operationally defined abuse measures, abuse was associated with higher scores on all TSI subscales (see Table 6). Examination of the confidence intervals for the regression coefficients indicated that the self-defined and operationally defined abuse variables on the SRB did not differ significantly in their ability to differentiate between those reporting abuse and those reporting no abuse.

## DISCUSSION

In this study, rates of childhood abuse were significantly different for the SHIP survey and the SRB. The SHIP data provided the lowest estimates of participants' childhood abuse histories. Recruits were aware that the information they revealed on this survey would become part of their military medical records, and only 5% acknowledged a history of abuse. Using operational definitions to categorize participants as abused in the confidential SRB resulted in the highest estimated rates (60%), while the rate of 31% for self-definition in the SRB fell in the middle. The current sample can be considered to be a representative sample of recruits: All recruits in gender integrated units were invited to participate in the initial survey and response rates were over 90%. Researchers who want to make comparisons between abuse rates obtained from military entrance surveys and rates from research studies of childhood abuse must carefully consider the way abuse is defined in abuse measures and the confidentiality of the survey before proceeding.

Assessment of childhood abuse through self-defined items requires both retrospection and subjective judgment on the part of participants. They must recall experiences and identify those experiences as abusive before responding in the affirmative. In contrast, operationally defined items, though they may place at least as great a burden on memory (e.g., asking participants to estimate how many times abusive experiences occurred) may also serve to identify respondents who have had potentially abusive experiences that fit a

broader theoretical definition of abuse. A large percentage of respondents in the current study reported such potentially abusive experiences, and the results show that operationally defined measures effectively identify both self-defined and theoretically defined abuse.

However, the subset of individuals who reported self-defined abuse but no specific abusive experiences demonstrates that both types of items serve a function. One possible explanation for the discrepancy in the current sample is that the self-defined items in the SRB and the SHIP survey did not include a time frame, whereas the operationally defined measures were restricted to childhood experiences. Also, as was noted previously, the operationally defined items on the SRB assessed verbal abuse, but they may have omitted other abusive experiences that could fall under the heading of "emotional abuse."

Finally, the present research demonstrates the effects of gender and type of abuse on likelihood of reporting. Women were more likely to report abuse on all of the measures used, possibly reflecting both higher abuse rates for women and reluctance of men to report abuse. This latter hypothesis is supported by the finding that having experienced sexual abuse leads to a higher likelihood of reporting for women, while having experienced physical abuse leads to a higher likelihood for men. These results for men should be considered carefully, however. The percentages of men reporting abuse on the SHIP survey among those who did not report physical or sexual abuse were quite small. Very small differences in very small numbers can lead to large changes in odds. In this case, the significance differences between the effects for men rest on a difference of only 0.7% in the numbers reporting abuse in the SHIP survey among participants who did not define themselves as abused in the SRB. These results are likely to be unstable as is suggested by the very large confidence interval for the effect of physical abuse.

A further goal of this study was to assess the ability of abuse measures to identify those at risk for negative outcomes. Both the self-defined and operationally defined measures of abuse on the SRB demonstrated a relationship between abuse and negative outcomes as measured by the TSI subscales. Further, the results suggest that self-defined and operationally defined measures do not differ in their ability to estimate the likelihood of negative outcomes related to abuse. However, in light of the fact that far more individuals were identified as abused by the operational definition, using an operational definition is likely to be most sensitive in identifying individuals at risk for PTSD symptoms related to abuse.

Because the SHIP survey included one item regarding childhood abuse histories, it was difficult to compare it with SRB data regarding participants' childhood experiences of abuse. The fact that the SRB total abuse variables were based on multiple items most likely increased the numbers of participants who were categorized as abused. This should be taken into consideration in comparing SRB abuse rates with rates in the SHIP survey. However, this methodological difference cannot account for the large differences between the estimated rates based on these two surveys. This is clear, considering the small numbers of participants who reported abuse in the SHIP survey among those who reported abuse on any individual SRB abuse variable.

Although recruits appear to underreport their histories of childhood abuse in the SHIP survey, the results of this report suggest that SHIP data are still useful in identifying a group of participants who are likely to benefit from mental health services. The SRB data show that participants (a) who have been abused but are unwilling to acknowledge it in the SHIP, and (b) who have had experiences that could be considered abusive but do not self-define them as abuse, may also have increased depression, anxiety, sexual concerns, and dysfunctional sexual behavior.

Our results also suggest that it is advisable to consider different types of abuse using separate measures. Recall that the SHIP item required respondents to

endorsed it to acknowledge having experienced "physical, emotional, or sexual abuse." To take one hypothetical example, a man who had experienced only physical abuse might be less willing to endorse this item since it might appear that he had been also been sexually abused.

There are likely to be many abused recruits, then, that the SHIP, or any other military survey that is not completely confidential, cannot identify. Based on our data, it is not practical to use questions about childhood abuse on a general health survey as a screening tool to identify recruits who will have difficulty with Navy life. Far less childhood abuse was reported in response to screening items on such a survey than was reported in response to a confidential questionnaire specifically about childhood. However, if a sailor appears to be having difficulty coping, noting whether he or she has reported a history of abuse and further exploring the possibility of an abuse history in a confidential setting may be helpful in addressing those difficulties.

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Table 1

*Demographic Characteristics of 5,498 Navy recruits, Great Lakes Recruit Training Center, 1996-997*

| | Men (*n* = 2,925) | Women (*n* = 2,573) |
|---|---|---|
| Mean Age | 19.71 | 19.66 |
| Education | | |
| Non high school graduate | 9.2% | 5.9% |
| High school graduate | 83.6% | 85.9% |
| College/technical training | 7.2% | 8.2% |
| Ethnicity | | |
| Black | 15.9% | 24.2% |
| Hispanic | 11.6% | 11.0% |
| White | 63.9% | 56.7% |
| Other | 8.6% | 8.1% |
| Marital status | | |
| Single | 90.9% | 88.8% |
| Married/cohabiting | 8.1% | 9.1% |
| Divorced/separated | 1.0% | 2.1% |
| Any children | 10.3% | 6.7% |
| Annual Family income | | |
| $25,000 or less | 31.9% | 39.9% |
| $25,000 - $49,999 | 37.7% | 38.2% |
| $50,000 or more | 30.4% | 21.9% |

Table 2

*Rates of Reported Childhood Abuse Based on Operational Versus Self-Definition*

| | Type of Abuse | | | |
|---|---|---|---|---|
| Type of Assessment | Emotional | Physical | Sexual | Any Abuse |
| Operational definition | | | | |
| Women | 32% | 24% | 46% | 66% |
| Men | 28% | 25% | 23% | 55% |
| Total | 30% | 25% | 34% | 60% |
| SRB self-definition | | | | |
| Women | 15% | 20% | 25% | 41% |
| Men | 11% | 12% | 4% | 22% |
| Total | 13% | 16% | 14% | 31% |
| SHIP self-definition | | | | |
| Women | | | | 9% |
| Men | _ | _ | _ | 2% |
| Total | _ | _ | _ | 5% |

*Note*: All differences between operational and self-definitions of abuse and across gender are significant at $p < .01$ or lower, except the gender comparison for operationally defined physical abuse *(*$p > .05$).

Table 3

*Percentages of Participants who Reported Childhood Abuse in the SHIP Survey Among Participants who Reported Specific Types of Abuse in the SRB*

| | Survey of Recruit Behavior | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Self-definition | | | | Operational definition | | | |
| | Women | | Men | | Women | | Men | |
| Abuse type | *n* | % | *n* | % | *n* | % | *n* | % |
| Verbal | 59 | 17% | 18 | 6% | 104 | 14% | 23 | 3% |
| Physical | 119 | 24% | 36 | 10% | 85 | 15% | 25 | 4% |
| Sexual | 178 | 29% | 15 | 13% | 186 | 18% | 17 | 3% |
| Total abuse | 210 | 21% | 44 | 8% | 210 | 14% | 37 | 3% |

Table 4

*Logistic Regression Results Relating Participants' Reports of Specific Types of Abuse in the SRB to Abuse History Data From the SHIP Survey*

| | Women | | Men | |
|---|---|---|---|---|
| SRB Abuse Type | Odds Ratio | 95% CI | Effect | 95% CI |
| Self-defined verbal | 1.58* | 1.06-2.37 | – | – |
| Self-defined physical | 2.34*** | 1.63-3.36 | 18.22*** | 8.77-37.89 |
| Self-defined sexual | 12.14*** | 8.30-17.77 | 3.24** | 1.38-7.58 |

*Note.* Odds ratios represent the increase in likelihood of reporting abuse on the SHIP survey if the given type of abuse was reported on the SRB. Only statistically significant results are listed in the table.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 5

*Mean TSI Subscale Scores by Gender*

| | Men | | Women | |
|---|---|---|---|---|
| TSI Subscale | Mean | *SD* | Mean | *SD* |
| Depression* | 50.55 | 8.99 | 49.61 | 8.89 |
| Anger/irritability | 50.02 | 10.17 | 50.75 | 10.00 |
| Intrusive experiences* | 51.81 | 10.72 | 50.96 | 10.42 |
| Defensive avoidance | 51.51 | 9.57 | 52.68 | 10.43 |
| Dissociation | 52.69 | 11.04 | 55.89 | 11.55 |
| Sexual concerns* | 49.50 | 8.33 | 51.64 | 10.30 |
| Dysfunctional sexual behavior* | 56.91 | 12.57 | 56.57 | 13.71 |
| Impaired self-reference | 53.09 | 9.61 | 52.21 | 9.61 |
| Tension reduction behavior* | 54.46 | 11.69 | 53.77 | 11.73 |
| Anxious arousal | 49.48 | 8.37 | 49.64 | 9.42 |

* $p < .05$.

Table 6

*Mean TSI Scores for Self-Defined and Operationally Defined Abuse Measures From the SRB*

| | Self-Defined | | | | Operationally Defined | | | |
|---|---|---|---|---|---|---|---|---|
| | No Abuse | | Abuse | | No Abuse | | Abuse | |
| TSI Subscale | Mean | *SD* | Mean | *SD* | Mean | *SD* | Mean | *SD* |
| Depression | 48.97 | 8.26 | 52.46 | 9.85 | 48.00 | 7.63 | 51.50 | 9.49 |
| Anger/irrit. | 49.02 | 9.61 | 53.21 | 10.48 | 47.25 | 8.95 | 52.46 | 10.27 |
| Intrusive exp. | 49.73 | 9.68 | 54.90 | 11.50 | 48.09 | 8.43 | 53.60 | 11.27 |
| Def. avoidance | 50.25 | 9.37 | 55.93 | 10.23 | 48.92 | 8.80 | 54.19 | 10.22 |
| Dissociation | 51.40 | 10.23 | 56.09 | 11.90 | 49.80 | 9.39 | 54.99 | 11.52 |
| Sexual concerns | 49.09 | 8.22 | 53.61 | 10.89 | 47.61 | 7.24 | 52.50 | 10.14 |
| Dys. sexual beh. | 55.30 | 12.03 | 59.79 | 14.75 | 52.12 | 9.80 | 59.82 | 14.13 |
| Imp. self-ref. | 51.36 | 9.08 | 55.38 | 10.15 | 49.97 | 8.56 | 54.45 | 9.87 |
| Tension red. beh. | 52.67 | 10.62 | 57.17 | 13.22 | 50.19 | 9.01 | 56.74 | 12.54 |
| Anxious arousal | 48.41 | 8.35 | 51.98 | 8.90 | 47.36 | 7.83 | 51.02 | 9.26 |

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**4. TITLE AND SUBTITLE** The Influence of Survey Methodology in Estimating Prevalence Rates of Childhood Sexual Abuse among Navy Recruits

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**14. ABSTRACT (maximum 200 words)**

This report compared results from the Sailors' Health Inventory Program survey with the results of a confidential survey, the Survey of Recruit Behavior (SRB) conducted by Naval Health Research Center. Using SRB operational definitions resulted in the highest rate of 60%, while 31% of the participants self-defined themselves as abused. Despite these differences in abuse rates, data from the SHIP survey, from SRB operational definitions, and from SRB self-definitions all independently accounted for variability in participants' symptoms of posttraumatic stress syndrome.

The results of this report suggest that SHIP data are useful in identifying Navy recruits who are likely to benefit from mental health services. However, it appears that the SHIP survey identifies a significantly lower percentage of people who have experienced childhood abuse. Because of this, using questions about childhood abuse as screening items to identify recruits who will have difficulty adjusting to Navy life is most likely unfeasible. Rather, if a sailor appears to be having difficulty coping, exploring the possibility of an abuse history in a confidential setting may be helpful in addressing those difficulties.

14. SUBJECT TERMS
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